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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,510	09/30/2003	Noriaki Okazawa	Q77770	1658
23373	7590	05/31/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			FIDLER, SHELBY LEE	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,510

Applicant(s)

OKAZAWA ET AL.

Examiner

Shelby Fidler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 15-21 and 23 is/are rejected.
- 7) ☒ Claim(s) 7, 11-14 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 8-10, 15, and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitahara (JP 2001-277524 A).

*regarding claims 1 and 20, Kitahara teaches a liquid ejecting head (*paragraph 1, line 1*) comprising:

a flow passage formation section including:

a plurality of nozzle openings, ejecting liquid therefrom (*nozzle orifices 19, Fig. 1*);

a plurality of pressure generation parts (*pressure generating components 12*),

corresponding to the nozzle openings respectively (*Fig. 1*);

a plurality of liquid supply passages (*ink feed hoppers 9, Fig. 2*), communicating with the pressure generation parts respectively for supplying liquid thereto (*paragraph 91, lines 6-7*);

a plurality of partition wall parts (*septums 7, Fig. 2*), each separating one liquid supply passage and its corresponding pressure generation part from another liquid supply passage and its corresponding pressure generation part (*Figure 2*);

a sealing section (*layers 5 and 6*), sealing the flow of passage formation section (*layers 5 and 6 seal the flow of through layer 4, Fig. 1*);

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a head case section, provided on the sealing section (*case 3 provided on layer 5, Fig. 1*);

wherein the partition wall parts respectively include liquid supply passage partition wall parts (*the section of septum 7 corresponding to ink feed hoppers 9, Figure 2*) which separate adjacent liquid supply passages (*Fig. 2*);

wherein the sealing section seals an area of the flow passage formation section corresponding to both the liquid supply passage partition wall parts (*layer 6 seals the area over septum 7, Fig. 1*) and the liquid supply passage of the flow formation section (*layer 6 seals the area over the section of septum 7 corresponding to the ink feed hoppers 9, Fig. 1 read with Fig. 2*), and the sealing section sealing the area has a first part (*layer 6, Fig. 1*) and a second part (*layer 5, Fig. 1*) being greater in thickness than the first part (*e.g. Fig. 1, Fig. 5a*); and

wherein the head case section is separated by a vacancy from the first part of the sealing section at the area (*case 3 is separated from layer 6 by a vacancy, Fig. 1*)

***regarding claims 2 and 21**, the head case section, provided on the flow passage formation section through the sealing section, has an expansion coefficient (*that of synthetic resin, paragraph 126, lines 1-2*) different from that of the flow passage section (*that of stainless steel, paragraph 154, line 2*), and

wherein the second part inside of the area where the head case section is provided on the sealing section is placed in a part of each of the liquid supply passage partition walls (*the part of layer 5 underneath case 3 is placed over the section of septum 7 corresponding to the ink feed hoppers 9, Fig. 1 and Fig. 2*)

***regarding claim 3**, the second part (*layer 5, Fig. 1*) is placed in at least one of a base side close to the pressure generation parts in the liquid supply passage partition wall parts and a tip

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side away from the pressure generation parts in the liquid supply passage partition wall parts
(*layer 5 is located over the ink feed hopper 9, Fig. 1*)

***regarding claim 4**, the second part (*layer 5, Fig. 1*) that is placed in the tip sides of the liquid supply passage partition wall parts is formed contiguously (*layer 5 is formed contiguously over the ink feed hopper 9, Fig. 1*).

***regarding claim 8**, the second part (*layer 5, Fig. 1*) and the first part (*layer 6, Fig. 1*) are separate bodies (*layer 5 is made of SUS, layer 6 is made of PI, Fig. 5a*)

***regarding claim 9**, the second part (*layer 5, Fig. 1*) of the sealing section is comprised of a metal thin film (*SUS, Fig. 5a*)

***regarding claim 10**, the second part (*layer 5, Fig. 1*) of the sealing section is comprised of a stainless steel thin film (*SUS, Fig. 5a*); and

the first part (*layer 6, Fig. 1*) of the sealing section is comprised of a resin thin film (*PI, Fig. 5a*); and

***regarding claim 15**, the head case section, provided on the flow passage formation section through the sealing section, has an expansion coefficient (*that of synthetic resin, paragraph 126, lines 1-2*) different from that of the flow passage formation section (*that of stainless steel, paragraph 154, line 2*),

wherein the second part (*layer 5, Fig. 1*) of the sealing section placed in the liquid supply passage partition wall part, to which the head case section is joined, has an area smaller than an area of the corresponding liquid supply passage partition wall parts (*Fig. 1 shows that the x-sectional area of layer 5 above ink feed hopper 9 is smaller than that of layer 4*)

***regarding claim 17**, the sealing section includes a metal thin film (*layer 5, Fig. 1 and Fig. 5a*) and a resin thin film (*layer 6, Figure 1*) that are overlapped (*Fig. 5a*);

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wherein the resin thin film (*layer 6*) is placed so as to face the flow passage formation section (*layer 6 faces layer 4, Figure 1*); and

wherein the first part is formed of the resin thin film with the metal thin film removed (*paragraph 98, lines 1-4*).

With regards to claim 18, the metal thin film (*layer 6*) is formed on the sealing section of the portions corresponding to the partition wall parts as the second part (*layer 6 is formed over the septums 7, Fig. 1*).

With regards to claim 19, an island portion (*element 11, Figure 3*) formed on each of the liquid supply passages so as to prevent a reduction in pressure in each of the pressure generation parts (*paragraph 91, lines 7-9*); and wherein the second part (*paragraph 33*) is formed on the sealing section corresponding to at least the pressure generation part side of the island portion (*paragraph 86, lines 1-2*).

Claim Rejections - 35 USC § 103

Claims 5, 16, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara (JP 2001-277524 A) in view of Tanaka et al. (US 5880763).

Kitahara teaches all claimed limitations except for the following:

*regarding claim 5, the second part is placed only in the tip side of the liquid supply passage partition wall parts

*regarding claims 16 and 23, a plurality of first parts are formed on the sealing section corresponding to the liquid supply passages

Tanaka et al. teaches the following:

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***regarding claim 5**, the second part is placed only in the tip side of the liquid supply passage partition wall parts (*Fig. 1 shows that plate 4 is thick only at the tip side of the ink supply inlet 9*)

***regarding claims 16 and 23**, a plurality of first parts are formed on the sealing section corresponding to the liquid supply passages (*Fig. 3b shows two thin portions 4b corresponding to each ink supply port 9*)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to utilize a second part that is placed only in the tip side of the liquid supply passage partition wall parts. The motivation for doing so, as taught by Tanaka et al., is to maintain printing quality with respect to stresses during ambient temperature changes (col. 2, lines 8-14).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara (JP 2001-277524 A) in view of Kitahara (US 6322203 B1).

Kitahara ('524) teaches all claimed limitations except for the following:

***regarding claim 6**, a third part outside the area wherein the head case section is placed;
and

wherein the third part is placed in at least one of the tip side of the liquid supply passage partition wall parts and the base side of the liquid supply passage partition wall parts

Kitahara ('203) teaches the following:

***regarding claim 6**, a third part outside the area wherein the head case section is placed (*element 11 protrudes outside the area of element 14, Figure 12*); and wherein the different thick part is placed in at least one of the tip side of the liquid supply passage partition wall parts and the

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base side of the liquid supply passage partition wall parts (*element 11 is placed above the base side of the liquid passage partition wall part 6", Figure 12*).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Kitahara's (JP 2001-277524 A) printhead with the location of Kitahara's (Us 6322203 B1) third part. The motivation for doing so is to compensate for inaccuracies during printhead assembly.

Allowable Subject Matter

Claims 7, 11-14, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the indication of allowable subject matter of claim 7 is the inclusion of the limitation of a liquid ejecting head wherein the first portion of the second part is placed only on a base side close to the pressure generation parts in the liquid supply passage partition wall parts; and wherein the second portion of the second part is placed only on a tip side away from the pressure generation parts in the liquid supply passage partition wall parts. It is these limitations found in the claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which indicates allowable subject matter.

The primary reason for the indication of allowable subject matter of claims 11-13 is the inclusion of the limitation of a liquid ejecting head wherein the second part to which the head case section is joined has a width smaller than a width of the corresponding liquid supply passage partition wall part. It is this limitation found in the claims, as it is claimed in the

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combination, that has not been found, taught, or suggested by the prior art of record which indicates allowable subject matter.

The primary reason for the indication of allowable subject matter of claim 14 is the inclusion of the limitation of a liquid ejecting head wherein the second part is formed corresponding to the island portions of the flow passage formation section where the head case section is placed, and the second part has a width smaller than a width of the corresponding island portion. It is this limitation found in the claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which indicates allowable subject matter.

The primary reason for the indication of allowable subject matter of claim 22 is the inclusion of the limitation of a liquid ejecting apparatus including a second part to which the head case section is joined has a width smaller than a width of the corresponding liquid supply passage partition wall part. It is this limitation found in the claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

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Communication with the USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelby Fidler whose telephone number is (571) 272-8455. The examiner can normally be reached on MWF 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vip Patel can be reached on (571) 272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SLF 2 Fidler 5/23/06

SLF

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PRIMARY EXAMINER